

What is Claimed is:

1. A method for controlling a user interface of a mobile communication device having at least one sensor, the method comprising:
 - 5 storing sensor signals indicative of a plurality of external conditions over a period of time;
 - 10 segmenting said sensor signals into a sequence of sensor data segments;
 - 15 storing an indication of an operation performed by the user during at least one of said sensor data segments; and
 - 20 determining a rule for future operation, the rule corresponding to said sensor data segments and the operation.
- 25 2. The method of claim 1, wherein said rule corresponds to a change in a user interface of the mobile communication device.
- 30 3. The method of claim 1, wherein said mobile communication device is a mobile telephone.
- 35 4. The method of claim 1, wherein said external conditions include an acceleration, a noise level, a luminosity sensors and a humidity.
- 40 5. The method of claim 1, wherein said segmenting of sensor signals is performed substantially in real time with said storing the sensor signals.
- 45 6. The method of claim 1, wherein said segmenting of sensor signals is performed after a predetermined amount of said sensor signals are stored.
- 50 7. The method of claim 1, wherein said segmenting comprises time series segmentation of the sensor signals.
- 55 8. The method of claim 1, wherein said determining said rule includes downloading a rule from an external source.
- 60 9. The method of claim 1, wherein said storing the sensor

signals comprises storing analog sensor data.

10. The method of claim 1, wherien said storing the sensor signals comprises storing digital sensor data.

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11. The method of claim 1, wherein said determining said rule further comprises storing the rule in a rule database.

12. The method of claim 11, further comprising:

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detecting a plurality of external conditions;

searching said rules database to find a rule matching the external conditions; and

performing a function corresponding to the rule.

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13. A mobile communication device, comprising:

at least one sensor for detecting a plurality of external conditions;

a display for presenting a user interface for selecting a plurality of operations;

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a memory for storing a plurality of sensor signals from said at least one sensor, said sensor signals indicative of a plurality of external conditions over a period of time;

a processor for segmenting said sensor signals into a sequence of sensor data segments;

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the memory further for storing an indication of an operation performed by the user during at least one of said sensor data segments; and

the processor further for determining a rule for modifying the user interface based on said sensor data segments and the operation.

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14. A mobile communication device, comprising:

means for detecting a plurality of external conditions;

means for presenting a user interface for selecting a plurality of operations;

means for storing a plurality of sensor signals from said at

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least one sensor, said sensor signals indicative of a plurality of external conditions over a period of time;

means for segmenting said sensor signals into a sequence of sensor data segments;

means for storing an indication of an operation performed by the user during at least one of said sensor data segments; and

means for determining a rule for modifying the user interface based on said sensor data segments and the operation.

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15. A computer-readable medium encoded with processing instructions for implementing a method performed by a mobile communication device having at least one sensor, the method comprising:

10 storing sensor signals indicative of a plurality of external conditions over a period of time;

 segmenting said sensor signals into a sequence of sensor data segments;

15 storing an indication of an operation performed by the user during at least one of said sensor data segments; and

 determining a rule for future operation, the rule corresponding to said sensor data segments and the operation.

20 16. The method of claim 1, wherein said sensor signals comprise at least one of: raw sensor data and pre-processed sensor data.

25 17. A method for controlling a user interface of a mobile communication device having at least one sensor, the method comprising:

 storing sensor signals indicative of particular external conditions;

 segmenting said sensor signals into a sequence of sensor data segments;

 storing an indication of an operation performed by the user during said particular external conditions; and

30 if the operation is performed during a later occurrence of the particular external conditions, determining a rule corresponding to the operation performed by the user and the particular external conditions.

35 18. The method of claim 17, wherein said rule corresponds to a change in a user interface of the mobile communication device.

19. The method of claim 17, wherein said mobile communication device is a mobile telephone.

5 20. The method of claim 17, wherein said particular external conditions include at least one of: an acceleration, a noise level, a luminosity sensors and a humidity.

10 21. The method of claim 17, wherein said segmenting of the sensor signals is performed substantially in real time with said storing the sensor signals.

15 22. The method of claim 17, wherein said segmenting of sensor signals is performed after a predetermined amount of the sensor signals are stored.

20 23. The method of claim 17, wherein said segmenting of sensor signals comprises time series segmentation of the sensor signals.

25 24. The method of claim 17, wherein said determining the rule includes downloading a rule from an external source.

25 25. The method of claim 17, wherein said storing the sensor signals comprises storing analog sensor data.

26 26. The method of claim 17, wherein said storing the sensor signals comprises storing digital sensor data.

30 27. The method of claim 17, wherein said determining the rule further comprises storing the rule in a rule database.

35 28. The method of claim 27, further comprising:
detecting a plurality of external conditions;
searching said rules database to find a rule matching the
external conditions; and
performing a function corresponding to the rule.

29. The method of claim 17, wherein said sensor signals

comprise at least one of: raw sensor data and pre-processed sensor data.

30. A mobile communication device, comprising:

5 means for storing sensor signals indicative of particular external conditions;

means for segmenting said sensor signals into a sequence of sensor data segments;

10 means for storing an indication of an operation performed by the user during said particular external conditions; and

means for determining a rule corresponding to the operation performed by the user and the particular external conditions, if the operation is performed during a later occurrence of the particular external conditions.

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31. A mobile communication device, comprising:

at least one sensor for detecting a plurality of external conditions;

20 a display for presenting a user interface for selecting a plurality of operations;

a memory for storing sensor signals indicative of particular external conditions;

a processor for segmenting said sensor signals into a sequence of sensor data segments;

25 the memory further for storing an indication of an operation performed by the user during said particular external conditions; and

the processor further for determining a rule corresponding to the operation performed by the user and the particular external conditions, if the operation is performed during a later occurrence of the particular external conditions.

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32. A computer-readable medium encoded with processing instructions for implementing a method performed by a mobile communication device having at least one sensor, the method comprising:

35 storing sensor signals indicative of particular external conditions;

segmenting said sensor signals into a sequence of sensor data segments;

storing an indication of an operation performed by the user during said particular external conditions; and

5 determining a rule corresponding to the operation performed by the user and the particular external conditions, if the operation is performed during a later occurrence of the particular external conditions.

33. A method for controlling a user interface of a mobile communication device having at least one sensor, the method comprising:

10 storing sensor signals indicative of a plurality of external conditions over a period of time;

segmenting said sensor signals into a sequence of sensor data segments;

15 storing an indication of a plurality of operations performed by the user during at least one of said sensor data segments; and

determining a rule for future operation, the rule corresponding to said sensor data segments and the plurality of operations.

34. A method for controlling a user interface of a mobile communication device having at least one sensor, the method comprising:

20 storing sensor signals indicative of particular external conditions;

segmenting said sensor signals into a sequence of sensor data segments;

25 storing at least one indication of a plurality of operations performed by the user during said particular external conditions; and

30 if the plurality of operations are performed during a later occurrence of the particular external conditions, determining a rule corresponding to the plurality of operations performed by the user and the particular external conditions.